

D. DoD Manufacturing Technology Program



DoD's Manufacturing Technology (ManTech) Program develops new and improved manufacturing processes to facilitate more affordable production of DoD weapon systems and components. The Program addresses process technology issues from the systems development phase through transition to production and into sustainment. ManTech investments target defense-essential needs that industry would not otherwise pursue, alone, in a timely manner. ManTech improvements generally translate into cost avoidance or cycle time reductions. However, investments also focus on developing “new” capabilities that actually may result in a more expensive component, but will provide dividends in system performance or life cycle cost that far outweigh the initial cost. The Program is structured around three major thrust areas:

- *Processing and Fabrication* activities develop affordable processes for metals, composites, electronics, and energetics/munitions by improving factory floor and repair and maintenance facility (depots, logistics centers, and shipyards) processes.
- *Advanced Manufacturing Enterprise* activities accelerate implementation of world-class industrial practices, advanced design, and information systems that support weapon system development, production and sustainment.
- *Sustainment* projects coordinate common DoD opportunities to increase the reliability and reduce the cost of repair processes for aging systems.

In response to the requirements of 10 U.S.C. section 2521(e), the Department issues an annual Five-year Plan for the ManTech Program in March of each fiscal year. The Plan, available on the Internet at <http://www.dodmantech.com/pubs/pubs.shtml>

- Describes the ManTech Program's goals, priorities, investment strategy, management and planning processes.
- Presents Military Department and Defense Logistics Agency funding for current and future years.
- Includes a description of all recently completed projects, and the status of implementation.
- Assesses the extent of cost sharing with commercial enterprises, defense program offices, other federal agencies, institutions of higher learning, and other sources.
- Summarizes program measures of effectiveness and the results of internal and independent reviews.
- Provides examples of success stories and achievements.

Technology Transfer & Dual Use

The ManTech program is driven by defense needs for technologies and systems that provide a superiority edge to the warfighters. In today's environment DoD is involving the commercial industrial base as soon as possible, by either adopting its best practices or transferring results of military processes to the commercial arena.

An example is the project that received the 2001 Defense Manufacturing Technology Achievement Award. This annual award recognizes Defense and private sector individuals responsible for developing innovative manufacturing processes that improve the affordability, cycle time, or readiness of Defense weapon systems or components.

Thanks to the dedicated and outstanding efforts of the government/industry team responsible for the Enhanced Manufacturing Processes for Body Armor Materials project, the Soldiers and Marines who may be in harm's way participating in Operation Enduring Freedom will be wearing the best ballistic protection available in the world today!

The Interceptor body armor jacket could stop 9mm handgun bullets in their tracks. Now, because of the work of this team and the success of this ManTech project, two highly effective, lightweight ceramic armor materials have been developed



and implemented which vastly enhance the Interceptor's capabilities. Siliconized silicon carbide and boron carbide plates that can stop rifle or machine-gun fire—which was not possible with this jacket in the past—are now available to insert in the jacket's pockets. Simula, with a production capacity of 5,000 plates per month, has already delivered 45,000 of its siliconized silicon carbide plates and is under contract to deliver 140,000 more; 12,000 of CERCOM's boron carbide plates have also been fielded. The new armor plates are 55% lighter than traditional body armor, and have a cost approximately 60% lower than the high performance armor plates that were available at the start of this

project. Because of the lower cost, it is anticipated that police departments across the U.S. will also adopt this product.



Also highly noteworthy is that this project exemplifies the “jointness” aspect of the ManTech Program. It utilized not only Army ManTech money but also significant funding contributions from Army and Marine program offices as well as from private industry.

Recent Management Initiatives & Accomplishments

The Joint Defense Manufacturing Technology Panel (JDMTP) recognized the need to provide specialized training to ManTech project engineers and managers. Currently a one and one-half day training session is offered. The training is provided by the JDMTP to help ManTech project engineers and managers become more effective in planning and executing ManTech projects. Offerings of this one and one-half day course are being conducted about every three months and have been attended by over 120 individuals.

The annual Defense Manufacturing Conference continues to be a premier activity for networking and sharing the results of ongoing and completed manufacturing programs across the DoD, industry, and other government agencies. The 2001 conference was held in Las Vegas, Nevada. Over 875 leaders from government, industry, and academia attended. The conference featured panel sessions providing customer viewpoints from both the weapon systems and logistics community. Exchange of technical information was promoted by use of concurrent briefings spanning over 100 technical projects, and via evening receptions held with 84 exhibitors from DoD, industry, and academia.

To improve ownership and advocacy for the ManTech program, the JDMTP initiated action to develop a hard-hitting booklet designed to improve program advocacy with the internal and external program customers across the DoD, with Congress, industry, and academia. It is expected that the booklet will be published in mid-2002.

The Science & Technology (S&T) Affordability Task Force continues to establish processes to strengthen the affordability and improve the transition of the DoD's S&T programs. The objective is to identify mechanisms that focus DoD's technology programs on implementing Integrated Product and Process Development , and facilitate use of Integrated Product Teams for key S&T programs expected to transition to the next phase of acquisition. Accomplishments to date include:

- Conduct of nine Affordability Conference/Workshops (see www.affordability.org for proceedings concerning the most recent conference).
- Development and application of criteria and measures to enhance S&T understanding of weapons systems acquisition needs to facilitate timely transition of technology.
- Review of over 100 S&T programs for best practice case studies.
- Development of guidelines for technology transition and a handbook on the process of affordability.
- Suggested training curriculum and formulation of a new course for S&T program managers.

